

Another obvious objection may be raised as follows:—The *Saprolegniæ* are in the main saprophytes, and yet they are said to be advanced towards apogamy—parthenogenetic, at any rate. The answer may be that they are saprophytic chiefly on animal protoplasm, which contains more potential energy than does vegetable protoplasm. At the same time, some *Saprolegniæ* are parasitic on plants, and *S. ferax* now appears to be parasitic on fish¹.

I may say, in conclusion, that it was during the study of the parasitic fungus of the coffee disease (*Hemileia vastatrix*)² in Ceylon that I was first led to speculate on the enormous amount of energy displayed by an organism which shows not the remotest satisfactory trace of sexuality, but which reproduces itself through many generations exclusively by means of asexual spores. That this energy of reproduction is derived from the coffee tree there can be no doubt, and that it is at the cost of the reproduction of the host is sadly evident; the clear inference from the fact that the coffee leaf supplies substance for the reproduction, etc., of a fungus at the expense of its own fruit, is that the fungus takes matters which are very rich in energy, so rich, indeed, that the fungus is not necessitated to sort these substances in special reproductive organs, and to secrete sexual elements, one of which would then reinvigorate the other, but may employ them forthwith for the purposes of its own relatively simpler existence and reproduction — *Quart. Jour. Mic. Sc.*, April, 1884.

GENERAL NOTES.

Polarity of Lettuce Leaves.—The orientation of the leaves of *Lactuca Scariola*, which has made it one of the two best known “compass” plants, is repeated in a less degree in the leaves of the common garden lettuce. The polarity is scarcely apparent until the lettuce begins to throw up the flowering stem. It is very weak in the curled and wrinkled varieties, but it is well marked in the Cos varieties, which have flat narrow leaves much like the wild *L. Scariola*. The observation was made on over one hundred varieties of lettuce grown the present season in the garden of the New York Agricultural Experiment Station.—J. C. A.

Hibiscus Moscheutos and H. roseus.—Dr. J. Guillaud, of Bordeaux, sends a pamphlet containing his investigations resulting in the identification of

¹ Prof. Huxley, ‘*Quart. Jour. Mic. Sc.*’, 1882. [It may be found upon otherwise healthy salmon, according to the investigations of Mr. George Murray. ‘*Science*’, IV, p. 27.—Eds.]

² [‘*Quart. Jour. Mic. Sc.*’, Jan. 1882; noticed and figured in ‘*Am. Nat.*’, July, 1882.—Eds.]

Hibiscus roseus of Thore—a species supposed to be indigenous to the southeastern coast of France, also found in Italy—with our Marsh Hibiscus. He is not aware that the same identification has been made by Mr. Daydon Jackson, and published a year or two ago in the nineteenth volume of the *Journal of the Linnean Society*, London. Dr. Guillaud has had the advantage of seeing the two plants growing spontaneously, ours in the neighborhood of New York, the other in the marshes of the Landes. *H. roseus* has also been found in North Italy, in the marshes of the Po and lagunes of the Adriatic, and, according to Dr. Guillaud, specimens have been received from Asia Minor, but no mention is made of it in Boissier's *Flora Orientalis*.

Is this species indigenous to Europe as well as to the Atlantic coasts of North America? Is it a survival from the time when the floras of Europe and Eastern America had more common elements than they now have? Or has it somehow been conveyed across the Atlantic, and if so, whether at some early period, or within historic times? Questions not easily answered. If the first, then this plant, like a few others that might be named, is in Europe what *Convallaria majalis*, *Littorella lacustris*, *Marsilia quadriflora*, *Scolopendrium* and perhaps *Calluna* are in North America. In favor of the second view, and even of a late and casual introduction, it is to be said, as Dr. Guillaud notes, that Thore found the plant on the coast of France only at the beginning of this century; that it was unknown to Tournefort, who botanized around Bayonne in the autumn of 1688; that the plant has disappeared from the particular stations where Thore found it and where it was said to abound, and that it is now more rare than formerly. Its spread from the Atlantic coast to that of the Adriatic may be owing to the carriage of seeds by marsh birds. Indeed, Dr. Guillaud thinks it may have been brought to Europe by sea birds. On the other hand, since it is now found in the district near Mantua, he quotes the lines in Virgil's *Eclogues*, in which the stems of *Hibiscus* are twice mentioned, in a way by no means *mal-a-propos*; but he thinks they might as well apply to Marsh-mallow. It appears that the specific name *Moscheutos* came to Linnæus through Cornuti, from a "*Rosa Moscheutos*" of Pliny, some kind of Rose-mallow, we may suppose. Since the two Linnæan species are clearly one, it is a pity that the name *H. palustris* was not chosen. Torrey and Gray are responsible for that. The reason of the choice was, that *H. Moscheutos* stands first in the book, and *H. palustris* is merely differentiated from that—reasons which need not have prevailed.

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Vincetoxicum.—Following some authority, which it is now not worth while to look up, it appears that in the Synoptical Flora of N. America, I had derived this name from "*vincues*, that serves for binding" and *toxicum*. Dr. Hance, in Britten's *Journal of Botany* for May, 1883, notes, (1) that the only authority for this adjective is a line of Plautus in which *vincea* is now known to have been a mistake of some copyist for *juncea*, and (2), that the old herbalists, Fuchs and Matthioli, clearly indicate that the Latin part of this hybrid name is from *vincere*, to conquer.

Stipules in Saxifragaceæ are of small account, as Prof. Coulter's pupils show me by sending *Mitella diphylla* with good stipules between the cauline leaves. It seems to be regularly so.

"Breweria minima," Gray, in Proc. Am. Acad. xvii, 228, is *Convolvulus pentapetaloides* of Linnæus, and doubtless was introduced into California from the Mediterranean region, probably with grain. It turns up from various parts of California of late. The style and stigmas are truly as in *Convolvulus*.

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